REMARKS

In the Office Action dated August 2, 2005, claims 23, 25-31, and 34-36 were presented for examination. Claims 23, 25, 26, and 35 were rejection under 35U.S.C. §103(a) as being unpatentable over *Smith* in view of *Jenkins*, claims 23, 25, 26, and 35 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Lotz et al.* in view of *Jenkins*, claims 23 and 26 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Babcock* in view of *Jenkins*, claims 23, 25-30, and 34-36 were rejected under 35 U.S.C. §103(a) as being unpatentable over *Smith* or *Lotz et al.* in view of *Jenkins* and further in view of *Pearl II et al.*, and claim 31 was rejected under 35 U.S.C. §103(a) as being unpatentable over *Hughey* in view of either *Smith* or *Lotz et al.* and further in view of *Jenkins* and *Pearl II et al.*

With this amendment, claims 23, 27-31, 34, and 36-42 are currently pending. Claims 1-22, 24, and 32-33 were previously canceled. Claims 25, 26, and 35 are canceled without prejudice or disclaimer. Applicant reserves the right to re-present any of the previously or currently canceled claims at a later date.

Applicant wishes to thank the Examiner for the careful and thorough review and action on the merits in this application. The following remarks are provided in support of the pending claims and responsive to the Office Action of August 2, 2005 for the pending application.

I. Rejection of Claims 23, 25, 26, and 35 under 35 U.S.C. §103(a) as being unpatentable over *Smith* in view of *Jenkins*

In the Office Action of August 2, 2005, the Examiner rejected claims 23, 25, 26, and 35 under 35 U.S.C. §103(a) as unpatentable over *Smith*, U.S. Patent No. 2,205,499, in view of *Jenkins*, U.S. Patent No. 2,363,250. Applicant has canceled claims 25 and 26, and has further amended claim 23 to include the limitations of claim 35.

Applicant hereby incorporates the comments to *Smith* '499 provided in response to the First Office Action.

U.S. Patent No. 2,363,250 to *Jenkins* pertains to a torch tip for cutting and welding. The torch tip of *Jenkins* is configured to receive a supply of oxygen and a combustible gas, wherein the combustible gas is in the form of hydrogen or acetylene. See *Jenkins*, page 2, column 1, lines 29-32. However, there is no teaching in *Jenkins* relating to the pressure at which the combustible gas is delivered to the cutting torch. Similarly, there is no teaching in *Smith* relating to the pressure at which a combustible gas may be delivered to the blow pipe. Applicant's claim 35 maintains that the combustible gas is delivered to the two part tip cutting torch under a minimum pressure of 15 psi. After careful review, it appears that the outstanding Office Action is silent with respect to the limitations of claim 35. In response to the outstanding Office Action, claim 23 has been amended to incorporate the limitations of claim 35. Neither *Smith* nor *Jenkins* teach the pressure for delivering a combustible gas to the two part tip cutting torch at the minimum pressure of 15 psi, as claimed by Applicant. It is known in the art that acetylene becomes unstable at pressures above 15 psi. See Exhibit A. Therefore, it is clear based on the chemical properties of acetylene that there is no teaching, suggestion, or motivation in either *Smith* or *Jenkins* to receive acetylene at the pressures claimed by Applicant. "If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01 (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 2d. 1125 (Fed. Cir. 1984)). Neither *Smith* or *Jenkins* teaches or suggests an ability to deliver a combustible gas to the two part tip cutting torch at a minimum pressure of 15 psi to a maximum of 80 psi, as claimed by Applicant. To read *Smith* or *Jenkins* as providing or supporting delivery of combustible gas as claimed by Applicant would require a modification to the invention of either *Smith* or *Cook* not envisioned or practical since acetylene becomes unstable at 15 psi and greater, as shown in Exhibit A. The only suggestion for delivery of a combustible in the range of at least 15 psi to a two part tip cutting torch is derived from Applicant's invention. Absent Applicant's invention, there is no suggestion or motivation for such a modification. Since the Examiner did not address this limitation in the outstanding Office Action, Applicant hereby requests removal of the rejection

and allowance of amended claim 23.

II. Rejection of Claims 23, 25, 26, and 35 under 35 U.S.C. §103(a) as being unpatentable over Lotz et al. in view of Jenkins

In the Office Action of August 2, 2005, the Examiner rejected claims 23, 25, 26, and 35 under 35 U.S.C. §103(a) as unpatentable over *Lotz et al.*, U.S. Patent No. 5,902,544, in view of *Jenkins*, U.S. Patent No. 2,363,250. Applicant has canceled claims 25 and 26, and has further amended claim 23 to include the limitations of claim 35.

Applicant hereby incorporates the comments to *Lotz et al.* '544 provided in response to the First Office Action, and the comments to *Jenkins* '250 provided above.

There is no teaching in *Lotz et al.* '544 relating to the pressure at which a combustible gas is delivered to the cutting torch and/or blow pipe. Applicant's claim 35 maintains that a combustible gas is delivered to the cutting torch under a pressure ranging from 15 to 80 psi. Neither *Lotz et al.* nor *Jenkins* teach the pressure for delivering the gas to the cutting torch at the pressure range as claimed by Applicant. It is known in the art that acetylene becomes unstable at pressures above 15 psi. See Exhibit A. Applicant claimed a range of at least 15 psi to about 80 psi for delivery of a combustible gas to the cutting torch in dependent claim 35, which has now been incorporated into claim 23. It is clear that based on the chemical properties of acetylene, the combustible gas taught in both *Lotz et al.* and *Jenkins*, it cannot be delivered at the pressures as claimed by Applicant. "The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in Applicant's disclosure." MPEP §2143 (citing *In re Vaeck*, 947 F.2d 488, 20 USPQ 2d. 1438 (Fed. Cir. 1991)). Neither *Lotz et al.* nor *Jenkins* teaches or suggests an ability to deliver a combustible gas to the two part tip cutting torch at a pressure ranging from a minimum of 15 psi to a maximum of 80 psi, as claimed by Applicant. To read *Lotz et al.* or *Jenkins* as providing or supporting delivery of combustible gas in the form of acetylene in the range as claimed by Applicant would require a modification to the invention of either *Lotz et al.* or *Jenkins* not envisioned since

acetylene becomes unstable at 15 psi and greater, as shown in Exhibit A.

"If the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01 (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). The only suggestion for delivery of a combustible gas in the range of about 15 psi to about 80 psi to a two part tip cutting torch is derived from Applicant's invention. Absent Applicant's invention, there is no suggestion or motivation for such a modification. Accordingly, in view of the above remarks and since the Examiner did not address this limitation in the outstanding Office Action, Applicant hereby requests removal of the rejection and allowance of amended claim 23.

III. Rejection of Claims 23 and 26 under 35 U.S.C. §103(a) as being unpatentable over *Babcock* in view of *Jenkins*

In the Office Action of August 2, 2005, the Examiner rejected claims 23 and 26 under 35 U.S.C. §103(a) as unpatentable over *Babcock*, U.S. Patent No. 2,521,199, in view of *Jenkins*, U.S. Patent No. 2,363,250. Applicant has canceled claim 26, and has further amended claim 23 to include the limitations of claim 35.

Applicant hereby incorporates the comments to *Babcock* '199 provided in response to the First Office Action, and the comments to *Jenkins* '250 provided above.

Babcock '199 teaches delivering a combustible gas in the form of acetylene to a blow pipe. Applicant's claim 35 maintains that the combustible gas is delivered to the cutting torch under a pressure ranging from 15 to 80 psi. As noted above, acetylene becomes unstable at pressures that exceed 15 psi. Neither *Babcock* nor *Jenkins* teach the pressure for delivering the combustible gas to the cutting torch at the pressure range as claimed by Applicant. Since acetylene becomes unstable at pressures in excess of 15 psi, there is no teaching, suggestion, or motivation to deliver the combustible gas in *Babcock* at the range as claimed by Applicant. "If

the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification." MPEP §2143.01 (citing *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)). Acetylene becomes unstable at 15 psi and greater. Furthermore, the Examiner did not address this limitation in the outstanding Office Action. It is clear that based on the chemical properties of acetylene it cannot be delivered at the pressures as claimed, and as such cannot be substituted as an equivalent into Applicant's claimed invention. Accordingly, Applicant hereby requests removal of the rejection and allowance of claim 23.

IV. Rejection of Claims 23, 25-30, and 34-36 under 35 U.S.C. §103(a) as being unpatentable over *Smith* or *Lotz et al.* in view of *Jenkins* and further in view of *Pearl II et al.*

In the Office Action of August 2, 2005, the Examiner rejected claims 23, 25-30, and 34-36 under 35 U.S.C. §103(a) as unpatentable over *Smith*, U.S. Patent No.2,205,499, or *Lotz et al.*, U.S. Patent No. 5,902,544, in view of *Jenkins*, U.S. Patent No. 2,363,250, and further in view of *Pearl II et al.*, U.S. Patent No. 4,661,057. Applicant has canceled claims 25 and 26, and has further amended claim 23 to include the limitations of claim 35.

Applicant hereby incorporates the comments to *Smith* '499, *Lotz et al.*'544, and *Pearl II et al.* '057 provided in response to the First Office Action, and the comments to *Jenkins* '250 provided above.

The *Pearl, II et al.* patent ('057) discloses a heat transfer apparatus that uses a torch cutting tip. However, *Pearl, II et al.* does not teach or suggest that the cutting tip actually cuts metal, which is the essence of Applicant's invention. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." MPEP §2141.01(a) (citing *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)). Applicant's invention pertains to cutting metal, as noted

in the pending claims. The *Pearl, II et al.* patent clearly pertains to a heat exchanger for use with heating metals, not for cutting metals. The act of heating metal and the act of cutting metal are two independent acts that are not necessarily analogous. Use of a heat exchanger is commonly envisioned in the act of soldering, which commonly joins metals. Use of a metal cutting apparatus actually separates metal objects, an act which is the opposite of soldering. Accordingly, it is clear that the *Pearl, II et al.* patent is non-analogous art and should not be combined with prior art pertaining to cutting metal, as claimed by Applicant.

Applicant does acknowledge that *Pearl, II et al.* teaches the grouping of combustible gases as claimed by Applicant, but for a different purpose, heating versus cutting. "When determining the patentability of a claimed invention which combines two known elements, the question is whether there is something in the prior art as a whole to suggest the desirability, and thus the obviousness, of making the combination." *In re Rouffet*, 149 F.3d 1350, 47 USPQ 2d 1453 (Fed. Cir. 1998) citing *In re Beattie*, 974 F.2d 1309, 24 USPQ 2d 1040 (Fed. Cir. 1992). The Examiner has failed to demonstrate how the *Smith* and *Jenkins* patents teach or suggests substitution use of the combustible gases of *Pearl et al.* for a metal cutting apparatus. "The Examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed." *Id.* In fact, both MAPP and chemtane are forms of combustible gases that did not exist at the time of patenting of either *Smith* or *Jenkins*. See Exhibits B and C. As documented, MAPP was first used in commerce in 1961, and chemtane was first used in commerce in 1975. There is no basis for motivation of the substitution of the combustible gases outside Applicant's claimed invention, especially since MAPP and chemtane were not know or otherwise available during the lifetime of the *Smith* and *Jenkins* patents. In fact, the Examiner has failed to produce a prior art reference that uses MAPP or chemtane to cut metal. Accordingly, since chemtane and MAPP were both unknown forms of combustible gas at the time of both *Smith* and *Jenkins*, clearly they could not be envisioned as substitutable for Applicant's invention at the pressures as claimed by Applicant.

"Rejecting patents solely by finding prior art corollaries for the claimed elements would

permit an Examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be an 'illogical and inappropriate process by which to determine patentability.' " *In re Rouffet* citing *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996). Clearly by combining four prior patents, the Examiner is dissecting the elements of Applicants claims and joining them in a way not previously envisioned. Accordingly, Applicant respectfully requests the Examiner to remove the rejection of claims 23, 25-30, and 34-36.

V. Rejection of Claim 31 under 35 U.S.C. §103(a) as being unpatentable over Hughey in view of either Smith or Lotz et al. and further in view of Jenkins and Pearl II et al.

In the Office Action of August 2, 2005, the Examiner rejected claim 31 under 35 U.S.C. §103(a) as unpatentable over *Hughey*, U.S. Patent No. 2,515,302, in view of either *Smith* '499, or *Lotz et al.* '544, and further in view of *Jenkins* '250 and *Pearl, II et al.*, U.S. Patent No. 4,661,057.

Applicant hereby incorporates the comments to *Hughey* '302, *Smith*'499, *Lotz et al.* '544, *Jenkins* '250, and *Pearl II et al.* '057 provided in response to the First Office Action and above.

As noted above, the *Pearl, II et al.* patent ('057) discloses a combustion apparatus in the form of a heat exchanger. The patent teaches the use of a combustible gas to enter the torch to provide a cutting flame, wherein the torch has an adapter to mix gases and to distort the exiting cutting oxygen. However, *Pearl, II et al.* does not teach the structure of the two part tip cutting torch, the associated pressures of the delivery gases, nor applying the apparatus to cut metal as claimed by Applicant.

With respect to claim 31 there is no support in *Hughey, Smith, Lotz et al, Jenkins,* or *Pearl II et al.* to provide a combustible gas at the claimed pressure ranges from the group

selection claimed by Applicant. The invention as noted in Applicant's claims functions on a different principle than that taught in the combination of *Hughey* with either *Smith* or *Lotz et al.*, or *Jenkins* and *Pearll II et al.* Applicant's invention as per claim 31 is for a method for cutting metal. This includes the use of a two part tip cutting tourch and/or accommodation for a combustible gas in the form of: propane, chemtane, propylene, MAPP, or natural gas. It is the structure of the two part tip cutting torch that accommodates the selection of LP gases at the pressures indicated in the dependent claims.

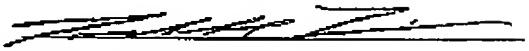
For it to be obvious to combine prior art references, the references must teach, suggest, or motivate one with ordinary skill in the art to combine the references and create the claimed invention. "Obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." MPEP §2143.01. The *Hughey* patent does not support the claimed selection of combustible gases at the claimed pressure of Applicant to cut metal. As discussed above, neither of the prior art references teaches or suggests application the combustible gas at the pressures as claimed by Applicant to cut metal. The *Hughey, Smith, Lotz et al., Jenkins,* and *Pearl II et al.* patents do not individually or in combination teach or suggest the use of a two part cutting tip and/or a combustible gas as claimed by Applicant. Accordingly, Applicants respectfully contend that the combination of *Hughey, Smith, Lotz et al., Jenkins,* and *Pearl II et al.* does not meet the standard set by the CAFC's interpretation of 35 U.S.C. §103(a), and respectfully requests allowance of claim 31.

Applicant believes that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. Accordingly, Applicant requests that the Examiner indicate allowability of claims 23, 27-31, 34, and 36-42, and that the application pass to issue. If the Examiner believes, for any reason, that personal communication will expedite prosecution of the application, the Examiner is hereby invited to telephone the undersigned at the number provided.

For the reasons outlined above, withdrawal of the rejection of record and an allowance of

this application are respectfully requested.

Respectfully submitted,

By: 

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Date: November 2, 2005

Chemtane 2

The new generation cutting fuel
The safer, environment friendly fuel gas

Chemtane 2 is a cutting fuel developed over 15 years by Jalapa Gas and Chemical Corporation. During the past decade, Jalapa has devoted extensive resources to developing and refining the blending of its chemicals.

The end result – a new generation cutting fuel that is more economical, faster, and safer than acetylene. This product's performance offers the consistency and reliability not associated with other products. Our quality control program and stringent distribution guidelines guarantee the end user a dependable cutting fuel alternative.

The largest advantage of using Chemtane 2 is cost. Our fuel lasts 7 times longer than acetylene while at the same time outperforming it. The economics compound quickly as customers realize the savings associated with having a product that carries this kind of workload. Expenditures related to labor costs, handling, weight, and storage are drastically reduced.

The Cutting Fuel for Cutting Cost

Characteristics

As a gas	Chemtane 2	Acetylene	Propylene	Mapp	Propane	Natural Gas
Flame Temp. in Oxygen - °F	6000	5589	5295	5301	4579	4600
Heating Values BTUs per cu. ft.	2810	1470	2371	2380	2510	1050
BTUs per						

EXHIBIT A

pound	24,812	21,315	21,864	21,063	21,636	24,780
Cu. Ft. per pound of gas (or liquid)	8.83	14.5	8.89	8.85	8.62	23.6
Wgt. compared to air	1.5	.91	1.47	1.48	1.52	.55
Limits of flammability in air - %	2.3-9.4	2.5-80.0	2.0-11.1	3..4-10.8	2.4-9.6	5.3-14.0
Toxicity	Low	Low	Low	Moderate	Low	Low
Reactivity	Low	Copper & Silver Alloys	Low	Copper & Silver Alloys	Low	Low
Backfire tendency	Low	High	Slight	Moderate	Low	Low
Max Pressure	Cylinder	15psi	Cylinder	Cylinder	Cylinder	Supply
Shock sensitivity	Stable	Unstable	Stable	Unstable	Stable	Stable
As A Liquid						
Wgt per gallon - lbs	4.24	-	4.35	4.80	4.23	-
Boiling point - °F	-43.6	-81	-47	-36 to -4	-44	-250
At 70° F generates vapor pressure of	125 psi	-	130 psi	94 psi	120 psi	-
Shock sensitivity	Stable	Unstable	Stable	Unstable	Stable	Stable

Chemtane 2 **is successfully being used in numerous industrial manufacturing and fabrication environments with repeated success. This product is utilized in cutting, scarfing, gouging, brazing, soldering, flame hardening, thermal spraying, and flame coating. At half the cost and a seventh of the handling it's easy to see why *Chemtane 2* is the best choice over acetylene.**

Product Features & Benefits

- **Reduced fuel costs by 50% or better**
- **High cutting speed - reducing labor**
- **Equal oxygen consumption**

- **Reduced handling and storage**
- **Reduced change out time**
- **Extremely high flame temperature**
- **Minimum slag and weldback**
- **Burns clean - no soot or smoke**
- **Limited torch backfire**
- **Narrow explosive limits**
- **Stable, not sensitive to shock**
- **Non-toxic, odorized for detection**

Trademarks > Trademark Electronic Search System(Tess)

TESS was last updated on Wed Oct 12 04:12:43 EDT 2005

Typed Drawing

Word Mark	MAPP
Goods and Services	IC 001. US 006. G & S: Liquefied Hydrocarbon Gas. FIRST USE: 19610713. FIRST USE IN COMMERCE: 19610713
Mark Drawing Code	(1) TYPED DRAWING
Serial Number	72128976
Filing Date	October 2, 1961
Current Filing Basis	1A
Original Filing Basis	1A
Registration Number	0745630
Registration Date	February 26, 1963
Owner	(REGISTRANT) Dow Chemical Company, The CORPORATION DELAWARE Midland MICHIGAN (LAST LISTED OWNER) BOC GROUP, INC., THE CORPORATION DELAWARE 100 MOUNTAIN AVENUE MURRAY HILL NEW PROVIDENCE NEW JERSEY 07974
Assignment Recorded	ASSIGNMENT RECORDED
Type of Mark	TRADEMARK
Register	PRINCIPAL
Affidavit Text	SECT 15. SECTION 8(10-YR) 20040210.
Renewal	2ND RENEWAL 20040210
Live/Dead Indicator	LIVE

EXHIBIT B

United States Patent and Trademark Office

Trademarks > Trademark Electronic Search System(Tess)

TESS was last updated on Wed Oct 12 04:12:43 EDT 2005

CHEMTANE

Word Mark	CHEMTANE
Goods and Services	IC 004. US 015. G & S: INDUSTRIAL GAS. FIRST USE: 19751215. FIRST USE IN COMMERCE: 19751215
Mark Drawing Code	(5) WORDS, LETTERS, AND/OR NUMBERS IN STYLIZED FORM
Serial Number	73087303
Filing Date	May 17, 1976
Current Filing Basis	1A
Original Filing Basis	1A
Registration Number	1054194
Registration Date	December 14, 1976
Owner	(REGISTRANT) CHEMTANE CORPORATION CORPORATION FLORIDA 1345 S. MISSOURI AVE. CLEARWATER FLORIDA 33516 (LAST LISTED OWNER) JALAPA GAS & CHEMICAL CORPORATION CORPORATION ASSIGNEE OF TEXAS 4300 SOUTH WAYSIDE SUITE 110 HOUSTON TEXAS 77087
Assignment Recorded	ASSIGNMENT RECORDED
Type of Mark	TRADEMARK
Register	PRINCIPAL